



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



SI-8000HD Series Surface-Mount, Separate Excitation Step-down Switching Mode

■Features

- Surface-mount package (TO263-5)
- Output current: 5.5 A
- High efficiency: 83% (at TYP, $V_o = 5\text{ V}$)
- Requires only 5 discrete components (SI-8008HD)
- Built-in reference oscillator (150 kHz)
- Built-in drooping-type overcurrent and thermal protection circuits
- Built-in soft start circuit (Output ON/OFF available)
- Low current consumption during off

■Applications

- DVD recorder, FPD-TV
- Onboard local power supplies
- OA equipment

■Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit	Conditions
Input Voltage	V_{IN}	43	V	
Power Dissipation ^{*1}	P_D	3	W	When mounted on glass-epoxy board measuring 40×40 mm (copper laminate area: 100%)
Junction Temperature ^{*2}	T_J	+150	°C	
Storage Temperature	T_{stg}	-40 to +150	°C	
Thermal Resistance (Junction to Case)	θ_{j-c}	3	°C/W	When mounted on glass-epoxy board measuring 40×40 mm (copper laminate area: 100%)
Thermal Resistance (Junction to Ambient Air)	θ_{j-a}	33.3	°C/W	When mounted on glass-epoxy board measuring 40×40 mm (copper laminate area: 100%)

*1: Limited by thermal protection circuit

*2: This product has built-in thermal protection circuits that may activate when the junction temperature exceeds 130°C. The recommended design for the junction temperature during IC operation is below 125°C.

■Recommended Operating Conditions

Parameter	Symbol	Ratings	Unit	Conditions
		SI-8008HD		
Input Voltage Range	V_{IN}	V_o+3 ^{*1} to 40	V	
Output Voltage Range	V_o	0.8 to 24	V	
Output Current Range	I_o	0 to 5.5	A	$V_{IN} \geq V_o+3V$
Operating Junction Temperature Range	T_{jop}	-30 to +100	°C	
Operating Temperature Range	T_{op}	-30 to +85	°C	

*1: The minimum value of the input voltage range is 4.5 V or $V_o+3\text{ V}$, whichever is higher.

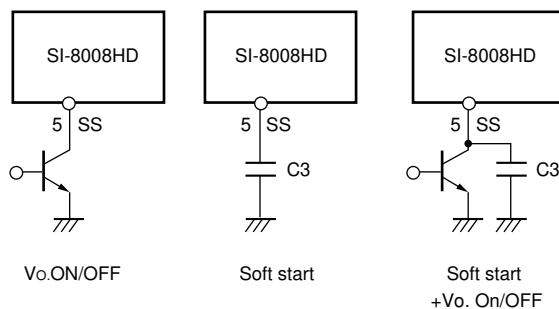
■Electrical Characteristics

($R_1=4.2k\Omega$, $R_2=0.8k\Omega$ when $T_a=25^\circ\text{C}$ and $V_o=5\text{V}$)

Paramter	Symbol	Ratings			Unit
		SI-8008HD			
		min.	typ.	max.	
Reference Voltage	V_{ADJ}	0.784	0.800	0.816	V
	Conditions	$V_{IN}=15\text{V}$, $I_o=1\text{A}$			
Temperature Coefficient of Reference Voltage	$(\Delta V_{ADJ}/\Delta T)$		±0.1		mV/°C
	Conditions	$V_{IN}=15\text{V}$, $I_o=1\text{A}$, $T_c=0$ to 100°C			
Efficiency	η		83		%
	Conditions	$V_{IN}=15\text{V}$, $I_o=3\text{A}$			
Oscillation Frequency	f_o		150		kHz
	Conditions	$V_{IN}=15\text{V}$, $I_o=3\text{A}$			
Line Regulation	ΔV_{OLINE}		60	80	mV
	Conditions	$V_{IN}=10$ to 30V , $I_o=3\text{A}$			
Load Regulation	ΔV_{OLOAD}		20	50	mV
	Conditions	$V_{IN}=15\text{V}$, $I_o=0.2$ to 5.5A			
Overcurrent Protection Starting Current	I_s	5.6	6.5	7.5	A
	Conditions	$V_{IN}=15\text{V}$			
SS Pin ^{*1}	Low Level Voltage	V_{SSL}		0.5	V
	Outflow Current at Low Voltage	I_{SSL}	10	30	
Conditions		$V_{SSL}=0\text{V}$			
Quiescent Circuit Current	I_q		6		mA
		Conditions	$V_{IN}=15\text{V}$, $I_o=0\text{A}$		
	$I_{q(OFF)}$		200	400	μA
Conditions	$V_{IN}=15\text{V}$, $V_{SS}=0\text{V}$				

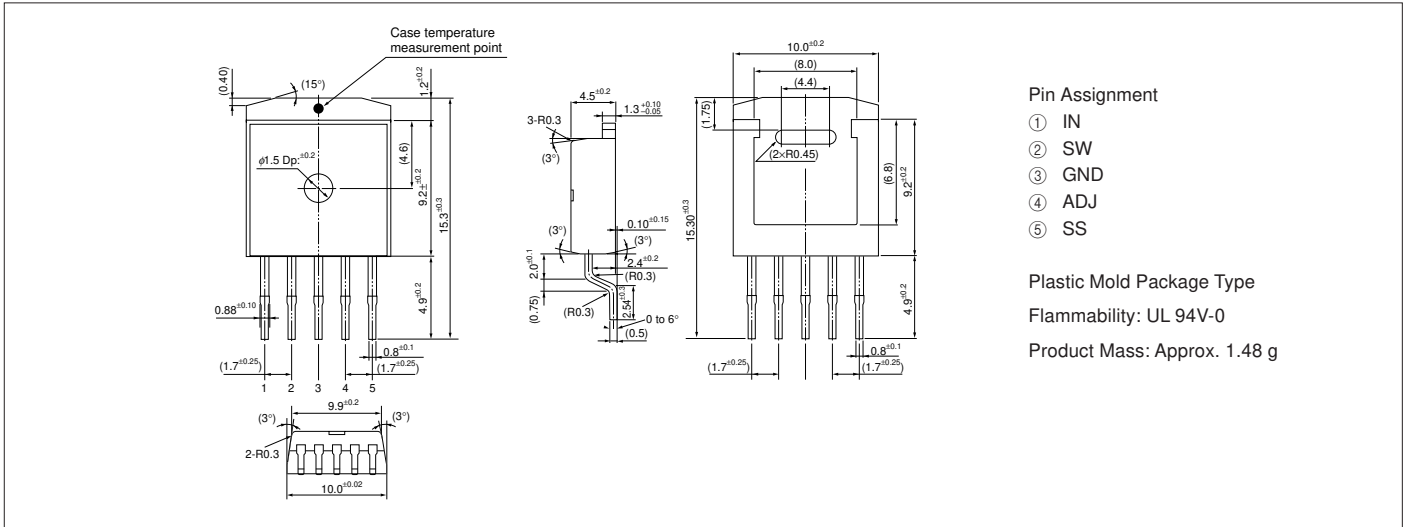
*1: Pin 5 is the SS pin. Soft start at power on can be performed with a capacitor connected to this pin. The output can also be turned ON/OFF with this pin.

The output is stopped by setting the voltage of this pin to V_{SSL} or lower. SS-pin voltage can be changed with an open-collector drive circuit of a transistor. When using both the soft-start and ON/OFF functions together, the discharge current from C3 flows into the ON/OFF control transistor. Therefore, limit the current securely to protect the transistor if C3 capacitance is large. The SS pin is pulled up (3.7 V typ.) to the power supply in the IC, so applying the external voltage is prohibited. If this pin is not used, leave it open.

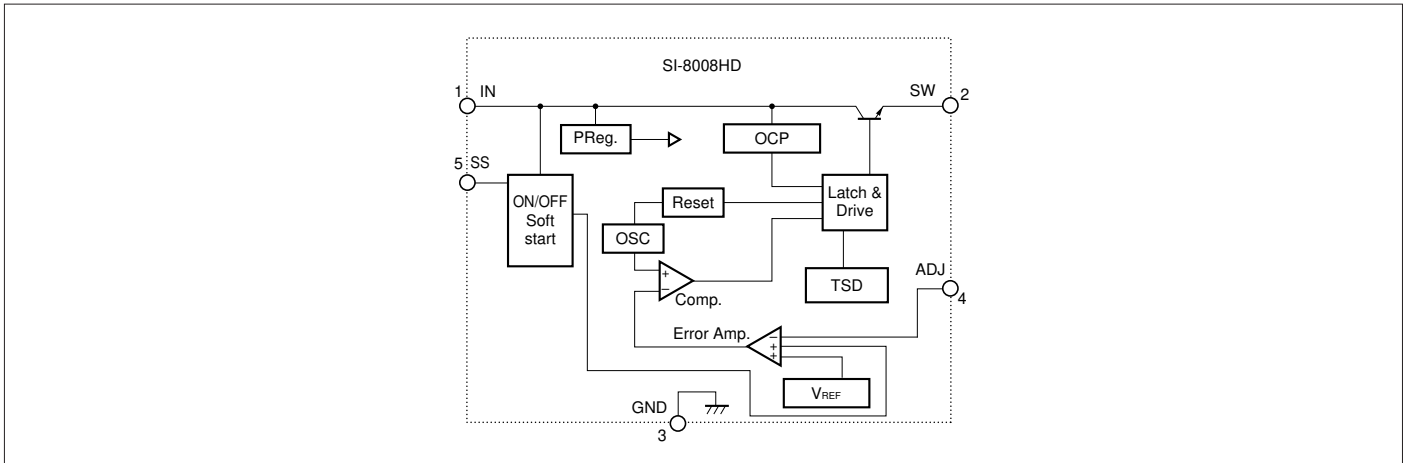


External Dimensions (TO263-5)

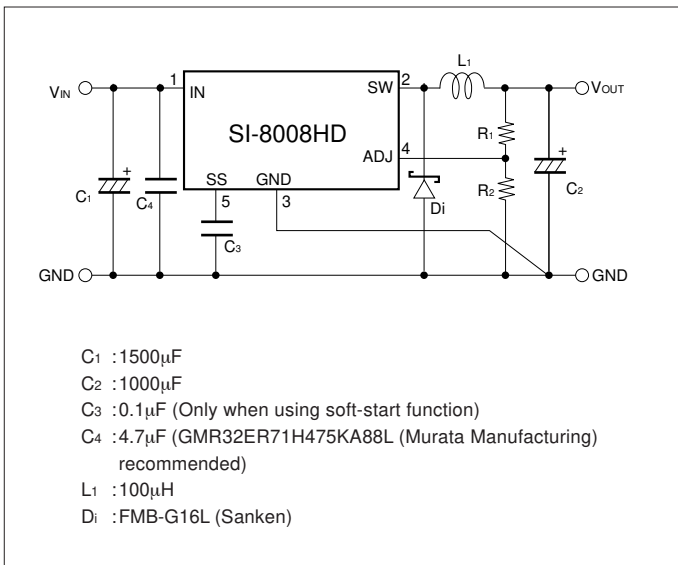
(Unit : mm)



Block Diagram



Typical Connection Diagram



Reference Data

